



-1-

SEQUENCE LISTING

<110> Chesnut, Jonathan D.  
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Madden, Knut  
Gleeson, Martin  
Fan, James  
Brasch, Michael A.  
Cheo, David  
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Temple, Gary F.

<120> Methods and Compositions for Synthesis of Nucleic Acid  
Molecules Using Multiple Recognition Sites

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<151> 2003-06-05

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<210> 72
<211> 5543
<212> DNA
<213> artificial sequence

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<220>
<223> Nucleotide sequence of plasmid pcDNA3.2/V5/GWD-TOPO

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<220>
<221> unsure
<222> (958)..(966)
<223> N can be any nucleotide: a, t, c, g

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<210> 73
<211> 5173
<212> DNA
<213> artificial sequence

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<220>
<223> Nucleotide sequence of plasmid pcDNA6.2/V5/GWD-TOPO

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<220>
<221> unsure
<222> (958)..(966)
<223> N can be any nucleotide: a, t, c, g

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<213> artificial sequence

<220>

<223> Partial sequence of pENTR/SD-dTOPO

<220>

<221> unsure

<222> (64)..(69)

<223> N can be any nucleotide: a, t, c, g



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<210> 75  
 <211> 52  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> Nucleotide sequence of TOPO-D71

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<210> 76  
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<210> 77  
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<220>  
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<400> 77  
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<210> 78  
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<220>  
 <223> Partial amino acid sequence of pENTR-dTOPO and  
 pcDNAGW-dTOPO

<400> 78  
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<210> 79  
 <211> 13  
 <212> PRT  
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<220>  
 <223> Partial amino acid sequence of pENTR/SD-dTOPO,  
 pENTR-dTOPO, and pcDNAGW-dTOPO

<400> 79

Lys Gly Gly Arg Ala Asp Pro Ala Phe Leu Tyr Lys Val  
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<210> 80  
 <211> 15  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> Product of binding a topoisomerase to part of a nucleic  
 acid molecule

<220>  
 <221> unsure  
 <222> (13)..(15)  
 <223> N can be any nucleotide: a, t, c, g

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<210> 81  
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 <212> DNA  
 <213> Unknown

<220>  
 <223> 15 bp core region of the wildtype att site

<400> 81  
 gcttttttat actaa 15

<210> 82  
 <211> 21  
 <212> DNA  
 <213> Unknown

<220>  
 <223> att site

<400> 82  
 caactttttt atacaaagtt g 21

<210> 83  
 <211> 25  
 <212> DNA  
 <213> Unknown

<220>  
 <223> attB1 site

<400> 83  
 agcctgcttt tttgtacaaa cttgt 25

<210> 84  
<211> 233  
<212> DNA  
<213> Unknown

<220>  
<223> attP1 site

<400> 84  
tacaggtcac taataccatc taagtagttg attcatagtg actggatatg ttgtgtttta 60  
cagtattatg tagtctgttt tttatgcaaa atctaattta atatattgat atttatatca 120  
ttttacgttt ctcgttcagc ttttttgtac aaagttggca ttataaaaaa gcattgctca 180  
tcaatttggt gcaacgaaca ggtcactatc agtcaaaaata aaatcattat ttg 233

<210> 85  
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<212> DNA  
<213> Unknown

<220>  
<223> attL1 site

<400> 85  
caaataatga ttttattttg actgatagtg acctgttcgt tgcaacaaat tgataagcaa 60  
tgctttttta taatgccaac tttgtacaaa aaagcaggct 100

<210> 86  
<211> 125  
<212> DNA  
<213> Unknown

<220>  
<223> attR1 site

<400> 86  
acaagtttgt acaaaaaagc tgaacgagaa acgtaaaatg atataaatat caatatatta 60  
aattagattt tgcataaaaa acagactaca taatactgta aaacacaaca tatccagtca 120  
ctatg 125

<210> 87  
<211> 27  
<212> DNA  
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<220>  
<223> attB0 site

<400> 87  
agcctgcttt tttataactaa cttgagc 27

<210> 88  
<211> 27

<212> DNA  
<213> Unknown

<220>  
<223> attP0 site site

<400> 88  
gttcagcttt tttatactaa gttggca 27

<210> 89  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attL0 site

<400> 89  
agcctgcttt tttatactaa gttggca 27

<210> 90  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attR0 site

<400> 90  
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<210> 91  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attP1 site

<400> 91  
gttcagcttt tttgtacaaa gttggca 27

<210> 92  
<211> 27  
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<213> Unknown

<220>  
<223> attL1 site

<400> 92  
agcctgcttt tttgtacaaa gttggca 27

<210> 93  
<211> 25  
<212> DNA  
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<220>  
<223> attR1 site

<400> 93  
gttcagcttt tttgtacaaa cttgt 25

<210> 94  
<211> 25  
<212> DNA  
<213> Unknown

<220>  
<223> attB2 site

<400> 94  
accagcttt cttgtacaaa gtggt 25

<210> 95  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attP2 site

<400> 95  
gttcagcttt cttgtacaaa gttggca 27

<210> 96  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attL2 site

<400> 96  
accagcttt cttgtacaaa gttggca 27

<210> 97  
<211> 25  
<212> DNA  
<213> Unknown

<220>  
<223> attR2 site

<400> 97  
gttcagcttt cttgtacaaa gtggt 25

<210> 98  
<211> 22  
<212> DNA  
<213> Unknown

<220>  
<223> attB5 site

<400> 98  
caacttttatt atacaaagtt gt 22

<210> 99  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attP5 site

<400> 99  
gttcaactttt attatacaaaa gttggca 27

<210> 100  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> attL5 site

<400> 100  
caacttttatt atacaaagtt ggca 24

<210> 101  
<211> 25  
<212> DNA  
<213> Unknown

<220>  
<223> attR5 site

<400> 101  
gttcaactttt attatacaaaa gttgt 25

<210> 102  
<211> 22  
<212> DNA  
<213> Unknown

<220>  
<223> attB11 site

<400> 102  
caacttttct atacaaagtt gt 22

<210> 103  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attP11 site

<400> 103  
gttcaactttt tctatacaaaa gttggca 27

<210> 104  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> attL11 site

<400> 104  
caacttttct atacaaagtt ggca

24

<210> 105  
<211> 25  
<212> DNA  
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<220>  
<223> attR11 site

<400> 105  
gttcaacttt tctatacaaa gttgt

25

<210> 106  
<211> 22  
<212> DNA  
<213> Unknown

<220>  
<223> attB17 site

<400> 106  
caacttttgt atacaaagtt gt

22

<210> 107  
<211> 27  
<212> DNA  
<213> Unknown

<220>  
<223> attP17 site

<400> 107  
gttcaacttt tgtatacaaa gttggca

27

<210> 108  
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<212> DNA  
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<220>  
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<400> 108  
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24

<210> 109

<211> 25  
<212> DNA  
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<220>  
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<400> 109  
gttcaacttt tgtatacaaa gttgt 25

<210> 110  
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<212> DNA  
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<220>  
<223> attB19 site

<400> 110  
caactttttc gtacaaagtt gt 22

<210> 111  
<211> 27  
<212> DNA  
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<220>  
<223> attP19 site

<400> 111  
gttcaacttt ttcgtacaaa gttggca 27

<210> 112  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> attL19 site

<400> 112  
caactttttc gtacaaagtt ggca 24

<210> 113  
<211> 25  
<212> DNA  
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<220>  
<223> attR19 site

<400> 113  
gttcaacttt ttcgtacaaa gttgt 25

<210> 114  
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<212> DNA



<213> Unknown

<220>

<223> attB20 site

<400> 114

caactttttg gtacaaagtt gt

22

<210> 115

<211> 27

<212> DNA

<213> Unknown

<220>

<223> attP20 site

<400> 115

gttcaacttt ttggtacaaa gttggca

27

<210> 116

<211> 24

<212> DNA

<213> Unknown

<220>

<223> attL20 site

<400> 116

caactttttg gtacaaagtt ggca

24

<210> 117

<211> 25

<212> DNA

<213> Unknown

<220>

<223> attR20 site

<400> 117

gttcaacttt ttggtacaaa gttgt

25

<210> 118

<211> 22

<212> DNA

<213> Unknown

<220>

<223> attB21 site

<400> 118

caacttttta atacaaagtt gt

22

<210> 119

<211> 27

<212> DNA

<213> Unknown

<220>  
<223> attP21 site

<400> 119  
gttcaacttt ttaatacaaa gttggca 27

<210> 120  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> attL21 site

<400> 120  
caacttttta atacaaagtt ggca 24

<210> 121  
<211> 25  
<212> DNA  
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<220>  
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<400> 121  
gttcaacttt ttaatacaaa gttgt 25

<210> 122  
<211> 15  
<212> DNA  
<213> Unknown

<220>  
<223> Theoretical protein N-terminus DNA sequence

<400> 122  
atgggatctg ataaa 15

<210> 123  
<211> 19  
<212> DNA  
<213> Unknown

<220>  
<223> Theoretical PCR primer

<400> 123  
caccatggga tctgataaa 19

<210> 124  
<211> 43  
<212> DNA  
<213> Unknown

<220>  
<223> Oligonucleotide linker

<400> 124  
gactcgtaat acgactcact atagggccct tattccgata gtg 43

<210> 125  
<211> 42  
<212> DNA  
<213> Unknown

<220>  
<223> Oligonucleotide linker

<400> 125  
agggccctat agtgagtcgt attacgagtc aaaaaaaaaa aa 42

<210> 126  
<211> 16  
<212> DNA  
<213> Unknown

<220>  
<223> Oligonucleotide linker

<400> 126  
caacactatc ggaata 16

<210> 127  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 127  
gctcaccatg gatgatgata tcgc 24

<210> 128  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 128  
ggaggagcaa tgatcttgat cttc 24

<210> 129  
<211> 33  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 129  
cacggatccg ctcaccatgg atgatgatat cgc 33

<210> 130  
<211> 33  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 130  
cacaagcttg gaggagcaat gatcttgatc ttc

33

<210> 131  
<211> 25  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 131  
atggctagca aaggagaaga acttt

25

<210> 132  
<211> 25  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 132  
ttattttag agctcatcca tgcca

25

<210> 133  
<211> 29  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 133  
gatgactcgt aatacgactc actataggg

29

<210> 134  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> PCR Primer

<400> 134  
gatgactcgt aatacgactc acta

24

<210> 135

<211> 11  
<212> DNA  
<213> Unknown

<220>  
<223> 5' end of Element 2

<400> 135  
ggccataagg g 11

<210> 136  
<211> 11  
<212> DNA  
<213> Unknown

<220>  
<223> 3' end of Element 1

<400> 136  
gttccgaagg g 11

<210> 137  
<211> 11  
<212> DNA  
<213> Unknown

<220>  
<223> oligonucleotide

<400> 137  
ggcctaaagg g 11

<210> 138  
<211> 33  
<212> DNA  
<213> Unknown

<220>  
<223> TOPO-D71 5' end

<400> 138  
cggaacaaat tgaaattcctt cctcgggaag tgg 33

<210> 139  
<211> 12  
<212> DNA  
<213> Unknown

<220>  
<223> TOPO-D70 5' end

<400> 139  
ctgatacatg tc 12

<210> 140  
<211> 48  
<212> DNA

<213> Unknown

<220>

<223> pENTR-dTOPO and pcDNAGW-dTOPO 5'end

<220>

<221> misc\_feature

<222> (43)..(48)

<223> n is a, c, g, or t

<400> 140

ttgtacaaaa aagacggctc cgcggccgcc cccttcacca tgnnnnnn

48

<210> 141

<211> 12

<212> DNA

<213> Unknown

<220>

<223> TOPO-D74 5' end

<400> 141

cgggggaagt gg

12

<210> 142

<211> 45

<212> DNA

<213> Unknown

<220>

<223> pENTR/SD-dTOPO, pENTR-dTOPO, and pcDNAGW-dTOPO 3' end

<220>

<221> misc\_feature

<222> (1)..(6)

<223> n is a, c, g, or t

<400> 142

nnnnnnaagg gtgggcgcgc cgaccagct ttctgtaca aagtg

45

<210> 143

<211> 14

<212> DNA

<213> Unknown

<220>

<223> F7220 Primer

<400> 143

tcgaaagggc cctt

14

<210> 144

<211> 14

<212> DNA

<213> Unknown

<220>  
<223> F6682 Primer

<400> 144  
ggccaagggc cctt 14

<210> 145  
<211> 11  
<212> DNA  
<213> Unknown

<220>  
<223> F8417 Primer

<400> 145  
gttccgaagg g 11

<210> 146  
<211> 16  
<212> DNA  
<213> Unknown

<220>  
<223> F8418 Primer

<400> 146  
cggaacaagg gccctt 16

<210> 147  
<211> 16  
<212> DNA  
<213> Unknown

<220>  
<223> F8420 Primer

<400> 147  
taggccaagg gccctt 16

<210> 148  
<211> 11  
<212> DNA  
<213> Unknown

<220>  
<223> F8419 Primer

<400> 148  
ggcctaaagg g 11